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## **DISCOVERY UPDATE: EEG-MONITORED PSI STUDY AT MONROE, PART I—PARTICIPANT BRAIN-WAVE ANALYSES**

*by Judith Pennington, Mind Mirror Facilitator*



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*In 1974, Judith experienced a spontaneous healing so luminous and powerful that it led her on a lifelong quest for understanding. She found credible answers in inspired writing, lucid dreaming, meditation, spiritual study, and decades of investigative research into the science of the brain, meditation, and consciousness.*

TMI's Discovery program has been an exciting research endeavor since its launch during the June 2017 Journey to Happiness event, as this is the only known long-term, large-scale, EEG-monitored psi study being conducted anywhere in the world.

Discovery has consistently proved that the gamma frequencies orchestrated by the Monroe Institute's Director of Innovation Bob Holbrook and delivered via Monroe's innovative Spatial Angle Modulation™ (SAM) technology support and enhance remote viewing capabilities, out-of-body travel, and profound mystical experiences that add meaning and purpose to people's lives.

This unique program differs from other scientific studies of psi phenomena in several ways. First, it is a double-blind study wherein the target (an object or representation of an object) is placed in a wooden box situated on a rafter near the ceiling of David Francis Hall. Only Monroe Institute Research Coordinator Ross Dunseath knows the

actual target, which he places in the box. Second, the target surveys filled out by participants after each exercise are numbered, not identified by name, and third, an independent panel of judges matches target descriptions to four photographs without knowing which is the actual target.

Additionally, all participants are simultaneously monitored on the Mind Mirror, a composite, dual-hemisphere electroencephalograph that measures 0.5 to 100 hertz (Hz, or cycles per second). This frequency range is ideal for measuring the effects of the SAM gamma rhythms employed by Discovery.



Filmmaker Sonia Barkallah stirred still more excitement into the August program by bringing a film crew from France. The crew of one discreetly filmed the Opening Baseline and morning hookups, and in the afternoons filmed interviews with organizers and several participants who talked about the OBEs and mystical events they were experiencing. A seasoned out-of-body traveler herself, Barkallah had heard about Discovery from friends who attended the February 2019 program. She was keen to promote Monroe's scientific study of psi and plans to distribute her film about Discovery worldwide.

Unexpectedly, she participated in the first two SAM exercises and, to everyone's delight, including hers, experienced OBEs during each. Later review of these two Mind Mirror recordings showed that her high-amplitude brain-wave pattern collapsed and nearly disappeared during both of her OBEs (a characteristic of out-of-body travel). She also correctly identified both targets.

During the second exercise, Barkallah spotted a set of pruning shears that were inadvertently left by Ross Dunseath in the target box. Ross laughed that this made for a triple-blind study, as that target was unknown even to him. Amazingly, two other participants correctly described the intended target *and* the pruning shears.

The energy of the August group was calm and relaxed, as Bob Holbrook noted early on. The 13 participants successfully identified 18 Target Score 1 hits out of 60 possibilities, and nine people traveled out of body during 20 OBEs and two bilocations.

According to their Post-Exercise Questionnaires, 11 of the 13 participants had profound mystical experiences during at least one exercise. The Insights Questionnaires showed that everyone gained insights during the program: eight participants attained at least one life-changing or life-enhancing insight, with two men and one woman receiving life-enhancing insights during three SAM meditations.

Although the target attainment rate was “close to statistical significance” and not statistically significant, being able to remote-view or travel out of body to correctly identify a target on a rafter is by most people’s standards not only significant—but also, pretty incredible.

### The Participants and their Feedback

The Opening Baseline confirmed that this was a highly advanced group of people. Eight participants produced high-value Awakened Mind patterns with their eyes open, a rarity that is undoubtedly due to the brain-wave coherence and high-amplitude alpha stimulated and supported by Hemi-Sync® and SAM.

All but one of these eight eyes-open Awakened Mind producers had previously attended five or more programs at the Monroe Institute and some of them as many as 10 and 20 programs. Most of them regularly listen to Monroe meditation tracks at home.

The other person with an eyes-open Awakened Mind was new to the Monroe Institute and a non-meditator. This young musician served as an excellent “control” for the group. His program goal was to empty his mind of chatter and to enter a quiet space. He did so during most of the exercises and proved to be one of the top two target-hitters, due a high-amplitude delta radar (which intuitively connects to universal mind). He traveled out of body twice, once to an orange-red planet and once to an encounter with a vibrational presence that provided clear guidance about his purpose in life. This out-of-body experience with Ultimate Reality, graded as the highest possible score of 10 on the Mystical Scale, opened his eyes to non-local realities and changed the course of his life.

The other 12 program participants reported that they maintain some regular meditation or spiritual practice. These included Holotropic Breathwork, shamanic drumming, Reiki, Therapeutic Touch, Pranic Healing, Super Brain Yoga, and Hatha Yoga, in addition to program attendance at Monroe and sporadic or regular meditations with Hemi-Sync and/or SAM tracks.

In their Closing Self-Assessments, all 13 participants wrote enthusiastically about the program. A philosophy professor learned to dive down into his subconscious theta and unconscious delta waves, which reduced his stress-gamma and provided welcome pain relief. He experienced two OBEs and correctly identified the target in one of them. In his Closing Self-Assessment, he wrote that he'd had a few vivid dreams at night, which was atypical, as pain usually interrupted his sleep. He enjoyed the kindness, friendship, and non-competitive sharing of others during the training and said that "the group dynamic was positive and supportive. My faith in humanity has increased."

A professional coach who had two OBEs, one Target Score 1, two Target Score 2s, and high mystical scores throughout the week wrote in her Closing Self-Assessment, "I am changed forever. My perception is so different because of my many experiences. I see the world in a whole new way."

### The Target Results

10 participants attained 18 Target Score 1 hits during two RV and three OBE exercises. Six participants correctly identified two targets, and two participants correctly identified three targets.

One of the two participants who identified three targets was a long-time practitioner of SAM exercises; ironically, the other top target-hitter was the first-timer at Monroe.

Nine of the 13 participants experienced at least one OBE or bilocation. Three people traveled out of body during two exercises; two people during three exercises. One of the two top target-hitters, who had previously attended more than 20 Monroe programs and listens to SAM meditations for at least 15 minutes per day, traveled OOB during seven of the eight possible EEG-monitored morning exercises. The eight exercises included the "Opening and Closing Baselines," an introductory SAM exercise without a target, and five target exercises.

Four participants attained a total of six Target Score 1 hits during OBEs or bilocations. This was surprising, as many OOB travelers forget or do not bother to look for the target. One participant correctly identified the target while traveling OOB during three exercises.

The following spreadsheet shows Target Score 1 hits in red and Target Score 2 hits in orange. OBEs and bilocations are noted in purple. The Mx numbers refer to the Mystical Experiences scale. (See the scale at the end of this report.) The asterisks refer to the Insights Questionnaire, explained below. The series of three numbers refers to, in order, Awakened Mind, Evolved Mind, and Gamma Synchrony pattern attainment percentages, discussed in depth near the end of this report.

The target exercises include “Light Wave RV,” “Liquid Mind OBE,” “Aria RV,” “Presence OBE,” and “Higher OBE.”

| Name | Opening Baseline   | Freeflow Zen       | Light Wave RV     | Liquid Mind OBE          | Aria RV             | Presence OBE         | Higher OBE               | Closing Baseline |
|------|--------------------|--------------------|-------------------|--------------------------|---------------------|----------------------|--------------------------|------------------|
| 1    | 91 37 26 * M2      | 79 30 12 * M2      | 86 28 12 * M1     | 94 20 20 ** M1 BI        | 91 28 20 ** M5      | 93 28 23 * M6 OBE    | 92 32 34 * M5 OBE        | 95 36 38 *       |
| 2    | 48 18 01 M5        | 88 35 10 M2        | 46 17 02 M2       | 24 08 00 2/1 ** M4       | 41 23 00            | 69 36 46 *** M10 OBE | 44 34 29 *** M6          | 53 47 17 * M4    |
| 3    | 89 32 46 * M1      | 71 34 65 M1        | 80 38 65 M1       | 92 12 26 M4              | 83 28 20 **         | 82 40 38 * M1        | 81 25 13 *               | 98 36 19 ** M1   |
| 4    | 38 05 37 *** M4    | 47 05 38 ** M2     | 28 24 14 * M1     | 75 15 44 M?              |                     | 30 24 12 M?          |                          |                  |
| 5    | 43 32 24 M1        | 35 28 09 M1        | 25 16 01 M1       | 31 27 20                 | 39 12 08            | 45 11 03             | 57 14 06                 | 44 06 01 M1      |
| 6    | 69 34 51 ** M7 OBE | 68 33 47 * M7 OBE  | 62 39 41 M6 OBE   | 75 42 63 1/2 ** M6 OBE   | 73 24 52 ** M6 OBE  | 76 26 56 * M6 OBE    | 75 44 60 * M9 OBE        | 78 37 65 *** M9  |
| 7    | 76 22 55 * M3      | 51 09 55 ** M4     | 75 27 56 ** M5    | 55 23 27 *               | 65 50 25 * M5       | 65 50 25 * M6 OBE    | 72 55 45 ** M5 OBE       | 57 29 21 ** M5   |
| 8    | 77 19 18 *** M6    | 64 13 14 M3 OBE    | 83 40 13 M1       | 80 44 20 ** M3           | 81 44 23 *** M6     | 83 48 12 ** M4 OBE   | 76 40 9 M1 OBE           | 69 39 16 *** M4  |
| 9    | 71 05 60 * M1      | 68 44 26 * M4      | 59 03 69 * M4 OBE | 75 06 73 * M1            | 76 12 70 *** M1     | 73 13 70 *** M1      | 69 24 46 * M1            | 80 10 68 ***     |
| 10   | 75 44 44 *         | 72 37 51 *         | 82 33 23 *        | 81 35 26 1/2 *           | 75 37 41 *          | 79 39 56 *           | 70 40 54 **              | 95 18 49 ***     |
| 11   | 85 36 57 * M1      | 92 30 74 ** M5 OBE | 87 32 39 ** M1    | 93 31 65 *** M8 OBE      | 85 32 64 M10        | 90 33 69 *** M9      | 89 19 69 *** M10         | 87 27 71 *** M7  |
| 12   | 84 22 44 * M2      | 89 22 60 * M5      | 91 21 29 **       | 86 20 53 M1              | 81 20 43 M2         | 89 36 57 * M4        | 89 32 49 * M3 BI         | 82 21 80 * M1    |
| 13   | 21 24 38 ** M2     | 27 23 36 *** M2    | 06 03 14 M3 OBE   | 20 05 26                 | 18 20 33 *** M5 OBE | 24 12 44 M1          | 32 31 04 *               | 25 28 47 ** M3   |
|      | 1 OBE<br>M 35      | 3 OBEs<br>M 38     | 3 OBEs<br>M 30    | 2 OBEs, 1 Billoc<br>M 28 | 2 OBEs<br>M 40      | 5 OBEs<br>M 48       | 4 OBEs, 1 Billoc<br>M 40 | M 35             |

## Gamma and Altered States: from Profound Insights to Ultimate Reality

Close study of each participant’s brain-wave data shows that everyone increased the amplitudes of their low (35-44Hz), mid (45-64Hz) and/or upper (65-100Hz) gamma during all the SAM exercises. This means that their brain waves and/or states of consciousness entrained to the gamma beats, as expected and hoped. Gamma is associated with attentional awareness, love, compassion, mystical union, and psi states, as well as brain coherence and the stability of the 0.5Hz to 44Hz (hertz) Awakened and Evolved Mind patterns.

Scientific studies and previous Discovery programs find that high-frequency gamma waves synchronize all four lobes of the brain and stabilize brain-wave activity in the lower frequencies of the Awakened Mind of creative flow and peak performance and the Evolved Mind pattern of non-duality and mystical union. Fifteen years of gamma research by Mind Mirror practitioners, particularly at Monroe, shows that people expanding into higher states of awareness physically feel or sense small gamma amplitude increases as low as half a microvolt (0.5uV).

Such was the case during this program, as participants riding on gamma waves identified the target, traveled out of body, and entered mystical states of profound import to them.

*Mystical Scale.* Note in the above spreadsheet that 11 of 13 people reported Mystical Scale scores of 4 and above in their Post-Exercise Questionnaires. Self-reports of 4 and

above equate to powerful, super-ordinary experiences. Most notably, three people reported Mystical Scale scores of eight, nine, and 10. Two people reported Mystical Scale 10—an experience of immense power and union with Ultimate Reality. (See the Mystical Scale descriptors at the end of this report to grasp the profundity of these experiences.)

*Insights Questionnaire.* Participants further scaled the quality of their experiences on an Insights Questionnaire. All 13 participants reported having received an insight (\*) during at least one exercise. 10 people reported having had a very powerful insight (\*\*) in at least one exercise. Eight of 13 people reported having received a life-changing or life-enhancing (\*\*\*) insight. (These numbers are likely much higher, as a few people did not complete the Insights Questionnaire for each exercise.)

Two participants received life-changing insights (\*\*\*) during the 15-minute guided meditation in the Opening Baseline, compared to five people who received life-changing insights during the Closing Baseline. This increase in life-enhancing insights from the Opening to Closing Baseline suggests an increase in their perceptual abilities during the training.

Most importantly, the attainment of life-changing insights during both Baselines, *without* the benefit of SAM beats, reflects the participants' advanced meditation abilities and states of consciousness.

### High-Gamma Frequencies and Superordinary States

Of special note is a possible correlation between the gamma frequencies employed in the SAM exercises and the types of experiences people had. For example, Bob Holbrook included 44Hz gamma in “Freeflow Zen” (no target), 38Hz gamma in “Light Wave RV,” and 40Hz gamma in “Liquid Mind OBE,” and “Aria RV.” Both “Light Wave” and “Liquid Mind” show an extremely high target attainment rate; in fact, all but three of the Target Score 1 hits occurred during these first two 38Hz and 40Hz gamma exercises. (See the red-highlighted brain-wave scores in the above spreadsheet.)

Low gamma, especially 40Hz, is associated with coherence—that is, interhemispheric amplitude symmetry—and enhanced mental efficiency, integration, and flow. Previous Discovery programs have shown that 40Hz gamma stimulates and stabilizes highly refined Awakened and Evolved Mind patterns. It is possible that this high rate of target attainment during “Light Wave” and “Liquid Mind” is simply a matter of chance, especially since 40Hz gamma frequencies were also employed during “Aria,” which facilitated only one Target Score 1. The high Target Score 1 rate during “Light Wave” and “Liquid Mind” may amount to nothing more than “beginner’s luck,” the background music, other frequencies contained in the exercise, the participants’ energy levels on that day, or some unknown factor or factors.

However, the spreadsheet also shows that the last two SAM exercises, “Presence” and “Higher,” had a higher rate of OBEs. These last two exercises employed 40Hz low gamma and three harmonics of 80Hz, 120Hz, and 160Hz upper gamma. The spreadsheet shows a total of 10 OBEs during the first four exercises and 10 OBEs during the last two exercises: a ratio of 2.75 to 5.

In addition, two of the highest Mystical Scale scores were for “Presence” (48) and “Higher” (40), although “Aria” (40) also netted high Mystical scores with lower gamma frequencies. Factors other than the high-gamma frequencies could be responsible for these high Mystical scores. And in fact, it is possible, and even likely, that five consecutive days of surfing gamma waves propels people into OBEs, no matter what frequencies are in the SAM exercises.

Still, comparisons of super-high gamma frequencies with RV and OBE events are on the drawing board.

### Extraordinary Brain-wave Patterns and Improvements

Careful review of the left- and right-brain Composite Summary data windows (which track amplitude changes in beta, alpha, theta, delta, and gamma) for each person during each exercise showed that all 13 people responded to the gamma rhythms in the SAM exercises by increasing their low, mid, and often upper gamma frequencies.

Review of the Mind Mirror Summary statistical column charts showed that all 12 of the participants present for the Closing Baseline increased in at least one and often several of the three patterns measured on the Mind Mirror. This strongly suggests that their brain-wave pattern increases were the direct result of the SAM beats and their expansions into subconscious/unconscious and non-local multi-dimensional awareness.

The measured patterns include the Awakened Mind of peak performance, the Evolved Mind of universal awareness, and the Gamma Synchrony pattern of the Superconscious Mind. Statistical pattern attainment values were gathered for the Eyes Open, Eyes Closed, and Animal Meditation segments of the Opening and Closing Baselines and for all the SAM meditations. The baselines thus show where people began and, after the SAM meditations, where their brain waves and states of consciousness ended up.

The Composite Summaries show that the brain waves of all participants became more coherent over the course of the week. This increased coherence—that is, interhemispheric amplitude symmetry and the synchronized firing of beta, alpha, theta, delta, and gamma—strongly corresponds to target attainment success. Increases in brain coherence strongly relate to the percentage increases in the three Mind Mirror patterns.

As learned in previous Discovery programs, people with unstable brain-wave patterns (and sleepy or wandering attention) did not perceive the target or travel out of body, except in the case of “click-outs.” Several people repeatedly clicked-out during exercises, and on occasion they awakened from these deep, non-conscious trance states with accurate target images.

The Opening Baseline confirms that the participants’ meditation and spiritual practices were responsible for their advanced levels of consciousness. As mentioned earlier, eight of the 13 people produced high-value eyes-open Awakened Mind patterns at or above statistical scores of 50%. The eyes-open Awakened Mind is rare, as it means that the person has access to internal and external awareness at the same time.

Further, during the Opening Baseline, five people produced eyes-closed Awakened Mind patterns within the 75%-98% percentile range of advanced meditators, psychics, healers, mediums, and other highly developed and spiritually conscious people. During the eyes-closed Animal Meditation, seven people were within this same advanced range of 75%-98% statistical rewards for the Awakened Mind.

#### Mind Mirror Pattern Increases: Opening to Closing Baselines

##### *For the Awakened Mind pattern:*

- 6 people increased their Eyes-Open Awakened Mind patterns, including four who produced high-value Eyes-Open patterns to begin with. Two people increased by more than 30 percentage points. These are extraordinary increases which may or may not occur over the course of a meditator’s lifetime.
- 7 people increased their Eyes-Closed pattern by as much as 35 and 36 percentage points.
- 9 people increased their Animal Meditation percentages, most by a few points and one person by 20 percentage points.

##### *For the Evolved Mind pattern:*

- 7 people increased their Eyes-Open Evolved Mind patterns by 10 to 35 percentage points.
- 6 people increased their Eyes-Closed pattern by a few percentiles but one person by 30 points.
- 7 people increased their Animal Meditation pattern by a few percentiles but two people by 29 and 30.

##### *For the Gamma Synchrony pattern:*

- 6 people increased their Eyes-Open pattern, three of them by 12, 14, and 17 percentage points.



- 5 people increased their Eyes-Closed pattern, four of them by 19, 20, 22, and 35 points.
- 8 people substantially increased their Animal Meditation pattern, two by 17 points and one person by an extraordinary 36 points: from Opening 44 to Closing 80%. This is incredibly high value for the Gamma Synchrony pattern and a highly significant advance in brain coherence and consciousness.

### **ADDENDUM: MYSTICAL EXPERIENCES SCALE**

The following scale is loosely graduated toward the pinnacle experience of #10: “ultimate reality.” A self-score of 4 on the Mystical Scale (M4), as shown on the spreadsheet above, means that participants selected *any* four of the following descriptors. However, because this is a graduated scale, a selection of 4, even if it were the first four descriptors, would constitute a powerful and super-ordinary experience.

1. The loss of the usual sense of time and space
2. The experience that consciousness during this exercise was more real than your normal awareness
3. A sense that the experience cannot be adequately described in words
4. The experience of pure awareness
5. The experience of unity with something larger than yourself
6. A sense of awe or reverence
7. The experience of bliss or indefinable peace
8. Sensation of being surrounded in light
9. Feelings of universal love
10. You are convinced that you encountered ultimate reality

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